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# MACROECONOMICS

THEORIES AND POLICIES (Ninth Edition)

# 宏观经济学

## 理论与政策 (第九版)

理查德·T·弗罗恩 (Richard T. Froyen) 著

 中国人民大学出版社

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## 出版说明

中国的入世，使其真正融入到经济全球化的浪潮中。中国政府“引进来，走出去”战略，使得中国经济的发展需要大量的“国际化”人才储备。这就对我国一般本科院校多年来所采取的单一语言（母语）教学提出严峻挑战，财经院校涉外经济类专业实行双语教学改革迫在眉睫。

顺应这一潮流，中国人民大学出版社携手众多国际知名的大出版公司，如麦格劳-希尔、培生教育出版公司等，面向大学本科层次，遴选了一批国外最优秀的经济类原版教材，包括宏观经济学、微观经济学、计量经济学、金融学等经济类专业基础课。

我们在引进出版过程中，注重把好质量关，每一本书都经过该学科领域的专家审核选题和内容，争取做到把国外真正高水平的适合国内实际的优秀教材引进来。本套教材主要有以下特点：

第一，体系设计完整。本套教材精选了一批国外著名出版公司的优秀教材，基本上涵盖了经济学专业的核心课程。

第二，保持英文原版教材的特色。本套教材根据国内教学需要，对原书进行了一定的改编，主要删减了一些不适合和不符合我国国情的内容，但体系结构和内容方面都保持原版教材的特色。

第三，内容紧扣学科前沿。本套教材在原著选择上紧扣国外教学的前沿，基本上都选择国外最流行教材的最新版本，有利于老师和学生掌握国外教学研究的最新发展趋势。

第四，篇幅合理，价格适中。为适应国内双语教学内容和课时上的实际需要，本套教材在进行了删减改编后，篇幅更为合理。同时，考虑到学生实际的购买能力，我们采取低定价策略，这样，读者既能领略原版图书的风貌，又避免了高额的购买费用。

第五，提供强大的教学支持。依托国外大出版公司的力量，本套教材为教师提供了配套的教辅资料，如教师手册、PPT课堂演示文稿、试题库等，并配有内容丰富的网络资源，从而使教学更为便利。

本套教材既适合高等院校经济类专业的本科教学使用，也适合从事经济类工作和研究的人员阅读和培训使用。我们在选书、改编过程中虽然全面听取了专家的意见，做到尽可能满足读者的需求，但由于各教材的作者所处的政治、经济和文化背景不同，书中内容仍可能有不妥之处，我们真诚希望广大读者提出宝贵意见和建议，以便我们在以后的版本中不断改进和完善。

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# Preface

The term macroeconomics was first used by the Norwegian economist Ragnar Frisch in 1933. Macroeconomics is clearly the younger sibling of the economics family. It is no coincidence that macroeconomics emerged as a major branch of economics amid the chaotic conditions of the Great Depression of the 1930s. The severe economic problems of the time lent importance to the subject matter of macroeconomics—the behavior of the economy as a whole. A book by John Maynard Keynes, *The General Theory of Employment, Interest, and Money*, developed a framework in which to systematically consider the behavior of aggregate economic variables such as employment and output. During the two decades following World War II, Keynes's followers elaborated and extended his theories. From the first there were skeptics, perhaps most notably Milton Friedman, but Keynesian economics became the orthodox mode of thinking about macroeconomic questions.

The years since the late 1960s, however, have witnessed major challenges to Keynesian economics. In the 1970s there was increased interest in *monetarism*, the body of theory Milton Friedman and others had developed beginning in the 1940s. A new school of macroeconomic theory, the *new classical* economics, also came on the scene during the 1970s. In the 1980s, Keynesian policy prescriptions came under attack from a group called the *supply-side* economists. The 1980s also witnessed the development of two new lines of macroeconomic research: the *real business cycle* theory and the *new Keynesian* economics.

Many of the post-1970 developments in macroeconomics have been the result of dissatisfaction with the Keynesian theory and the policy prescriptions that follow from it. In addition to controversy, however, the past three decades have seen what all would agree is progress in our theories of the macroeconomy. There have been significant improvements in the handling of expectations, in our understanding of labor market institutions, in accounting for the macroeconomic implications of various market structures, in the modeling of open economies, and in accounting for the ultimate sources of economic growth.

In this book I have tried to explain macroeconomics, inclusive of recent developments, in a coherent way but without glossing over the fundamental disagreements among macroeconomists on issues of both theory and policy. The major modern macroeconomic theories are presented and compared. Important areas of agreement as well as differences are discussed. An attempt is made to demonstrate that the controversies among macroeconomists center on well-defined issues that are based on theoretical differences in the underlying models.

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## FEATURES

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Distinguishing features of the approach taken here include the following:

- An up-to-date summary of the Keynesian position, including research that has come to be called the *new Keynesian economics*.
- A detailed analysis of the challenges to the Keynesian position by the monetarists, new classical economists, and real business cycle theorists.
- An extensive treatment of monetary policy that considers both optimal tactics (the instrument problem) and possible optimal strategies (e.g., inflation targets). For both monetary and fiscal policy questions, policy issues are closely related to the theories we consider.
- An analysis of the post-1970 slowdown in U.S. output growth, capital formation, and growth in labor productivity. Within this context of intermediate-run growth, the views of the supply-side economists and their critics are examined. Also within this context of the determinants of rates of intermediate-run economic growth, we consider whether there are signs that the productivity slowdown of the 1970s has been reversed. Is there a “new economy” developing in the new century?
- A consideration of the determinants of long-run economic growth. Both the neo-classical growth model and recent models of endogenous growth are discussed.
- Consideration of foreign exchange rate determination and the International Monetary System. Monetary and fiscal policy effects in the open economy are analyzed within the framework of the Mundell–Fleming model.

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## ORGANIZATION

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Part I (Chapters 1 and 2) discusses the subject matter of macroeconomics, recent behavior of the U.S. economy, and questions of measurement. Part II (Chapters 3–8) begins our comparison of macroeconomic models. We start with the classical system and then go on to the Keynesian model. Part III considers challenges to the Keynesian system and rebuttals to these challenges. Chapter 9 examines monetarism and the issues in the monetarist Keynesian controversy. Chapter 10 examines alternative views of the unemployment–inflation trade-off and the *natural rate* theory. Chapter 11 presents the new classical theory with its central concepts of *rational expectations* and market clearing. In Chapter 12 two newer directions in macroeconomic research are examined. One, very strongly rooted in the classical tradition, is the real business cycle theory. The second, the new Keynesian economics, is, as its name suggests, firmly in the Keynesian tradition. Chapter 13 summarizes and compares the different models considered in Parts II and III.

Part IV considers open-economy macroeconomics. Chapter 14 focuses on exchange rate determination and the international monetary system. Chapter 15 utilizes the Mundell–Fleming model to examine the effects of monetary and fiscal policy in the open economy.

Part V deals with macroeconomic policy. Chapters 16 and 17 focus on monetary policy. Chapter 18 considers fiscal policy.

Part VI lengthens the time horizon of the analysis beyond the short run. Chapter 19 is concerned with growth over intermediate–run periods of a decade or two. Chapter 20 considers long-run equilibrium growth.

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## NEW IN THE NINTH EDITION

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- The chapters with the most significant revisions are those on monetary policy and economic growth. Revisions of the two chapters on monetary policy place greater emphasis on interest rates and inflation targeting strategies and less on money. The chapter on long-run economic growth has expanded coverage of endogenous growth models.
- The chapter on long-run growth has also been moved out of Part II. It is now placed together with the chapter on intermediate-run growth to form Part VI.
- New Perspectives have been added, including ones covering the possible trade-offs between equity and efficiency, the advantages and disadvantages of the Federal Reserve's adoption of inflation targeting, and the normative aspects of economic growth. Other Perspectives have been updated and revised.
- As in the previous edition, an attempt has been made to shorten and streamline the text. The chapters on consumption and investment and on money demand have been dropped. (They will still be available on the website for the book.) In the chapters in Parts II and III on economic models, material that is less relevant than when first written has been shortened or deleted. I believe that 90 percent of the new edition can be covered within a one-semester course.

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## ANCILLARIES

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- *Instructor's Manual with Test Bank:* This resource manual provides the instructor with detailed chapter summaries, answers to end-of-chapter questions, and a complete test bank. For each chapter, there are 50 to 70 multiple-choice questions as well as 10 to 15 problems and essay questions. The Instructor's Manual is available for download at <http://www.prenhall.com/froyen>. Further resources for both students and instructors may also be found on the companion website.

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# **PART ONE**

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## Introduction and Measurement

### **CHAPTER 1**

*Introduction*

### **CHAPTER 2**

*Measurement of Macroeconomic Variables*

**P**art I discusses the subject matter of macroeconomics, the behavior of the U.S. economy, and the measurement of macroeconomic variables. Chapter 1 defines macroeconomics and traces the macroeconomic trends in the United States since World War II. The chapter then poses some central questions in macroeconomics. Chapter 2 deals with measurement and defines the main macroeconomic aggregates. Central to this task is an examination of the U.S. national income accounts.

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# CHAPTER I

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## Introduction

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### 1.1 WHAT IS MACROECONOMICS?

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This book examines the branch of economics called *macroeconomics*. The British economist Alfred Marshall defined economics as the “study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of well-being.”<sup>1</sup> In macroeconomics, we study this “ordinary business of life” in the aggregate. We look at the behavior of the economy as a whole. The key variables we study include total output in the economy, the aggregate price level, employment and unemployment, interest rates, wage rates, and foreign exchange rates. The subject matter of macroeconomics includes factors that determine both the levels of these variables and how the variables change over time: the rate of growth of output, the inflation rate, changing unemployment in periods of expansion and recession, and appreciation or depreciation in foreign exchange rates.

Macroeconomics is policy oriented. It asks, to what degree can government policies affect output and employment? To what degree is inflation the result of unfortunate government policies? What government policies are *optimal* in the sense of achieving the most desirable behavior of aggregate variables, such as the level of unemployment or the inflation rate? Should government policy attempt to achieve a *target level* for foreign exchange rates?

For example, we might ask to what degree government policies were to blame for the massive unemployment during the Great Depression of the 1930s or for the simultaneously high unemployment and inflation of the 1970s. What role did “Reaganomics” play in the sharp decline in inflation and rise in unemployment in the early 1980s? To what degree have government policies been responsible for the sharp decline in the average inflation rate in the United States and other industrialized countries that occurred over the past two decades?

Economists disagree on policy questions. In part, the controversy over policy questions stems from differing views of the factors that determine the key variables mentioned previously. Questions of theory and policy are interrelated. Our analysis examines different macroeconomic theories and the policy conclusions that follow from those theories. It would be more satisfying to present *the* macroeconomic theory and policy prescription. Satisfying, but such a presentation would be misleading because there are fundamental differences among schools of macroeconomics. In comparing different theories, however, we see that there are substantial areas of agreement as well as disagreement. Controversy does not mean chaos. Our approach is to isolate key issues that divide macroeconomists and to explain the theoretical basis for each position.

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<sup>1</sup>Alfred Marshall, *Principles of Economics*, 8th ed. (New York: Macmillan, 1920), p. 1.

We analyze macroeconomic orthodoxy as it existed when the 1970s began, what is termed *Keynesian economics*. The roots of Keynesian theory as an attack on an earlier orthodoxy, *classical economics*, are explained. We then examine the challenges to the Keynesian position, theories that have come to be called *monetarism* and the *new classical economics*. Finally, we consider two recent theories. One, strongly rooted in the classical tradition, is the *real business cycle theory*. The other, the *new Keynesian theory*, is, as its name suggests, in the Keynesian tradition. How each theory explains the events from the 1970s to the present, as well as the policies each group of economists propose to provide for better future economic performance, is a central concern of our analysis.

## I.2 POST-WORLD WAR II U.S. ECONOMIC PERFORMANCE

Our tasks here are to sketch the broad outline of U.S. macroeconomic performance over the post-World War II period and to suggest some central questions addressed in our later analysis.

### Output

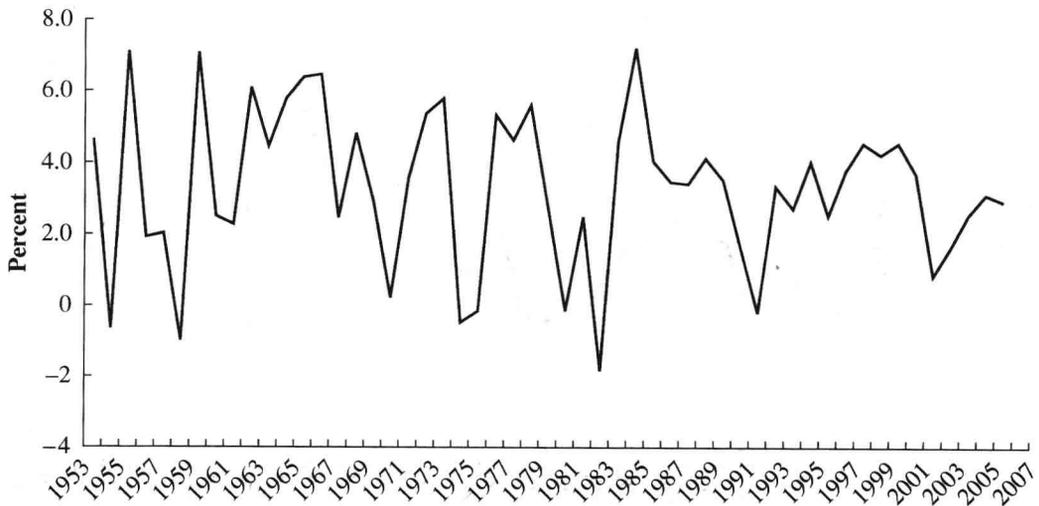
Figure 1-1 shows the growth rate of output for the United States for the years 1953–2006.

**gross domestic product (GDP)**  
a measure of all currently produced final goods and services

The output measure in the figure is **real gross domestic product (GDP)**. Gross domestic product measures current production of goods and services; *real* means that the measures in Figure 1-1 have been corrected for price change. The data measure growth in the quantity of goods and services produced.

The data in the figure show considerable variation in GDP growth over the past five decades. During the 1960s, there was steady, relatively high growth in GDP. In all other decades, there were years of negative growth; GDP declined in at least 1 year.

**FIGURE I-1** Annual Percentage Change in Real GDP, 1953–2006



**TABLE 1-1** Real GDP Growth in the United States, Average Percentage Change for Selected Periods

<i>Years</i>	<i>Percent</i>
1953–69	3.8
1970–81	2.7
1982–95	3.0
1996–2006	3.2

Table 1-1 summarizes growth trends over the past half century. The table indicates a decline of about 1 percentage point in the GDP growth rate in the post-1970 period. There are some signs of a reversal of this growth slowdown starting in the mid-1990s. Beginning in the late 1980s output growth appears to have become less volatile than in the previous three decades. This can be seen in Figure 1-1.

### Unemployment

**unemployment rate**  
the number of unemployed persons expressed as a percentage of the labor force

Figure 1-2 shows the U.S. **unemployment rate** for each year since 1953. The unemployment rate is the percentage of the labor force that is not employed.

The slower output growth in the post-1970 period is reflected in rising unemployment during these years, as can also be seen in Table 1-2, which shows average unemployment rates for selected periods. In the late 1990s there seemed to be a reversal of this trend as the unemployment rate fell to a 30-year low of just under 4 percent. Then as output growth slowed after 2000, the unemployment rate rose to nearly 6 percent. Although this rate is not

**FIGURE 1-2** U.S. Unemployment Rate, 1953–2006

